

Application No.: 10/578,117
Amendment dated: January 27, 2011
Reply to final Office Action of October 27, 2010
Attorney Docket No.: 0155.0003US1

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REMARKS/ARGUMENTS

Claims 1-11 are pending in this application.

Claim 1 has been amended as indicated hereinabove.

The amendment is supported by paragraphs [0010]-[0011] of the Specification as originally filed.

The pending final Office Action (page 2) states that "how to determine when each phase-coded timing signal symbol is received is not further recited in the claims." Independent Claim 1 has been amended to overcome this objection.

Claims 1-2 and 6 had been rejected under 35 U.S.C. § 103(a) over Kato et al. (U.S. Patent No. 6,021,137) in view of Merwin et al. (U.S. Patent No. 5,691,691) and McFayden (U.S. Patent No. 4,301,415). This rejection is respectfully traversed for the following reasons.

If examination at the initial stage does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of the patent.¹ The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of non-obviousness.²

The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."³ "[T]o determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue . . . this analysis should be made explicit. . . . [A] patent composed of several elements is not proved obvious merely by demonstrating that

¹ *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992)

² *Manual of Patent Examining Procedure* § 2142 (8th ed. rev. 7 July 2008)

³ *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR International Co. v. Teleflex Inc.* [hereinafter *KSR*], 550 U.S. 398, 418, 82 USPQ2d 1385, 1396 (quoting Federal Circuit statement with approval)

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each of its elements was, independently, known in the prior art. . . . [I]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.”⁴

Claims 1-2 and 6 comprise a timing signal source periodically transmitting phase-coded timing signals comprising one or more phase-coded timing signal symbols and using the AC current to determine when each phase-coded timing signal symbol is transmitted and to phase-code each timing signal symbol.

Claims 1-2 and 6 comprise each slave unit using AC current to determine when each phase-coded timing signal symbol is received and to decode each phase-coded timing signal symbol.

The pending final Office Action (page 3) states that “Kato discloses a timing signal source . . . using a reference signal to determine when each timing signal is transmitted (column 7, lines 58-65, wherein the polling signal is the timing signal).”

Applicants respectfully disagree.

The cited portion of Kato reads: “In the data collector 1, the control section 11 generates a polling signal PS by controlling the polling generating circuit 12 periodically or non-periodically. This polling signal PS is superimposed on the power line 5 as a spread signal after being subjected to spread spectrum modulation by the spreading section 21 with the spread code SC1. With this feature, polling is executed from the data collector 1 to all the terminal units 2, 3, and 4.”

In Claims 1-2 and 6, the AC current is used by a timing signal source to determine when to send a timing signal. However, in the cited portion of Kato, contrary to Claim 1, nothing indicates how to determine when to send the polling signal.

The pending final Office Action (page 3) states that “Kato discloses . . . each numbered slave unit receiving at least one timing signal and using the voltage to

⁴ KSR, 550 U.S. at 418, 82 USPQ2d at 1396

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determine when each timing signal symbol is received (column 13, lines 65 – col. 14, lines 1-5, wherein the superimposed spread signal on the power line is the voltage)."

Applicants respectfully point out that in the above statement "the timing signal", "the voltage", and "the superimposed spread signal" are the same thing; and that the cited portion of Kato reads: "Then, the data collector 80 superimposes a spread signal on the power line 5 periodically or non-periodically according to the polling signal PS. and polling is executed to the groups G1 (terminal units 90, 100) and G2 (terminal units 110, 120) in batch. The terminal units 90 and 100 in the group G1 provide response signals A11 and A12 prepared in a common certain period of time t11 preset respectively to spread spectrum modulation and transmit the signals to the data collector 80 as spread signals respectively."

Note that the slave units in Kato use the spread signal superimposed on a power line as the timing signal.

Contrary to what is stated in the pending final Office Action, Kato does not use a spread signal superimposed on a power line to determine when each timing signal symbol is received, because the spread signal superimposed on a power line in Kato is the timing signal.

In other words, in Claims 1-2 and 6 the AC current is used by slave units to determine when to receive a timing signal. However, in Kato, contrary to Claims 1-2 and 6, nothing is used by slave units to determine when to receive a timing signal (spread signal superimposed on a power line), except the timing signal itself.

The pending final Office Action (page 4) states that "Merwin discloses the slave units determine when each time symbol is received (column 3, lines 32-36)."

Applicants respectfully disagree.

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The cited portion of Merwin reads: "Each receiver 18 is operable to detect pulses inserted in the AC voltage by the pulse transmitter 16 and to translate a predetermined sequential pattern of pulses into a corresponding predetermined message."

There is nothing in the cited portion of Merwin, or anywhere else in Merwin, indicating that the signals transmitted as pulses in Merwin are timing signals. In other words, Merwin, contrary to Claims 1-2 and 6 does not teach each slave unit using AC current to determine when each timing signal symbol is received.

So, neither Kato, nor Merwin use anything to determine when to receive a timing signal, contrary to Claim 1, where the AC current is used for this purpose.

Furthermore, in Claims 1-2 and 6, as amended, the same AC current is used to determine when to send timing signals, to phase-encode the timing signals, to determine when to receive the phase-encoded timing signals, and to decode the phase-encoded timing signals.

The pending final Office Action (page 4) states that "McFayden discloses a phase coded timing signal (figure 3) and decoding a phase coded timing signal (figure 1, figure 4)."

Applicants respectfully disagree.

McFayden discloses a device for generating several AC voltage signals wherein a phase control code in the form a binary number controls the phase difference between the signals (see col. 3, lines 20-36; col. 8, lines 31-47): "The phase control code developed on bus 70 provides the vehicle by which the amount of deviation between the phase angles characterizing the two signals developed on the output lines 10 and 16 can be precisely controlled." Figs. 1 and 3-4 of McFayden illustrate this disclosure.

McFayden does not disclose explicitly or implicitly anything that may be called decoding of any phase coded signal in general, or decoding of phase coded signal using AC current to generate time marks, in particular.

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Contrary to Claims 1-2 and 6, as amended, neither Kato, nor Merwin, nor McFayden, alone or in combination, teach or suggest using phase-encoded timing signals or using an AC current to encode or to decode the phase-encoded timing signals.

Neither Kato, nor Merwin, nor McFayden, alone or in combination, disclose each slave unit using the same AC current to determine when to receive the phase-encoded timing signals and to decode the phase-encoded timing signals. Therefore, Claims 1-2 and 6, as amended, are non-obvious over Kato, Merwin, and McFayden under 35 U.S.C. § 103(a) and should be allowed.

Claim 4 had been rejected under 35 U.S.C. § 103(a) over Kato, Merwin, and McFayden in view of Tanaka et al. (U.S. Patent No. 4,998,245). Claims 3, 5, and 7-11 had been rejected under 35 U.S.C. § 103(a) over Kato, Merwin, and McFayden in view of Lester et al. (U.S. Patent No. 6,784,790). These rejections are respectfully traversed for the following reasons.

If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious.⁵

Claims 3-4 and 7-11 depend on Claim 1, which, as explained above, is non-obvious. Therefore, Claims 3-4 and 7-11 are patentable over Kato, Merwin, McFayden, Tanaka, and Lester under 35 U.S.C. § 103(a) and should be allowed.

It is believed that the present application is in condition for allowance. A Notice of Allowance is respectfully solicited in this case. Should any questions arise, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

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⁵ In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

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